

DOOSAN

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DoMORE®



DOOSAN TEAM TAKES ON WORK BY THE TON

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ABOUT THE COVER

Precon Marine runs Doosan equipment 10 to 12 hours a day to construct 4,100 linear feet of shoreline protection on Craney Island, Virginia.

DOOSAN WEB GUIDE

More information about Doosan products is just a click away.



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DOOSAN

WHEEL LOADERS

FASTER ENGINE RESPONSE. BETTER POWER MANAGEMENT.



New DL200-5 and DL200TC-5 wheel loaders feature five impactful machine enhancements

Two new Doosan DL200-5 and DL200TC-5 (tool carrier) wheel loaders, replacing the “dash-3” models, transition from an interim Tier 4 to a Tier 4-compliant diesel engine. These two new “dash-5” wheel loaders feature a hydrostatic transmission system — the first Doosan wheel loaders with this transmission system — in place of a traditional torque converter transmission.

1 Hydrostatic drive system

The new hydrostatic drive system offers several advantages, including the following:

- Improved fuel efficiency because of higher performance at low engine rpms
- Enhanced machine positional control increases productivity
- Reduced wear on the brakes as dynamic braking automatically slows the wheel loader

2 Selectable power modes

Select between three power modes that adjust the maximum engine rpm. Unique to the hydrostatic drive system, the engine rpm is not directly correlated to traveling speed, so the maximum travel speed remains unaffected.

- **Power:** Provides superior power and performance for tough conditions and truck-loading tasks
- **Standard:** Balances fuel consumption for everyday digging, grading and lifting tasks
- **Economy:** Reduces fuel consumption for low-demand applications

3 Traction control management

Easily adjust traction force to match jobsite conditions to reduce wheel slippage for more efficient operation in digging, stockpiling and loading applications. Choose from the following traction modes.

- **Max:** Provides maximum traction force
- **Traction control:** Allows the operator to choose from three levels of reduced traction forces to match jobsite conditions
- **S-mode:** Helps when operating on slippery roadway conditions

Instantly return to the Max traction mode by pressing the kick-down button on the joystick control.

Lift higher

Order a high-lift option, which is popular for loading trucks, on the DL200-5 wheel loader for an additional 15 inches of lift height.

4 Speed management

The new speed management feature allows you to obtain full engine rpm for optimal lift arm or hydraulic attachment performance, yet fine tune the maximum machine travel speed via seven present levels within first gear, up to 8 mph.

5 Tier 4 solution

The new Doosan wheel loaders are powered by Tier 4-compliant diesel engines. Doosan achieved Tier 4 emission requirements without a diesel particulate filter (DPF). The Tier 4 emission system includes:

- High-pressure common-rail (HPCR) fuel delivery system
- Cooled exhaust gas recirculation (CEGR)
- Wastegate turbocharger (WGT)
- Diesel oxidation catalyst (DOC)
- Selective catalytic reduction (SCR) with diesel exhaust fluid (DEF)

Visit www.DoosanEquipment.com and click on the Wheel Loaders link on the Products tab to learn more about Doosan wheel loaders and approved attachments.

MATERIAL HANDLERS

COMPLETE NICHE APPLICATIONS WITH EASE

Two new versatile material handlers feature many machine improvements

The new Doosan DX225MH-5 and DX210WMH-5 complete the “dash-5” material handler lineup.

Improved visibility

It's easy to get a better view of the material handler's attachment and work area from inside the cab. The DX225MH-5 features a 4-foot standard cab riser, with optional 6-foot cab riser or 7-foot hydraulic cab riser. A 7-foot hydraulic cab riser is standard on the DX210WMH-5.

Versatile machines

Doosan DX210WMH-5 and DX225MH-5 material handlers are designed to work in a variety of scrap-handling applications, including:

- Scrap yards
- Recycling centers
- Solid waste centers or transfer stations

Reduced fuel consumption

A new selectable feature — Smart Power Control (SPC) — comes standard on both of the new material handlers. SPC consists of two systems — Variable Speed Control and Pump Torque Control — that work together to improve machine efficiency while maintaining productivity and reducing fuel consumption by as much as 5 percent.

Tier 4 emission standards

Both machines meet Tier 4 emission standards with a high-pressure common-rail (HPCR) fuel delivery system, a cooled exhaust gas recirculation (CEGR), a diesel oxidation catalyst (DOC) and selective catalytic reduction (SCR) with diesel exhaust fluid (DEF).

Handle materials with precision

The material handlers' straight boom and droop-nose arm deliver optimal performance.

- Straight booms improve reach and lift height for better material placement
- Droop-nose arms provide enhanced access into containers, trucks and railcars, with either a grapple or magnet attachment



Uptime protection

Optional solid tires and a V-shaped side guard are available to increase machine uptime and protect your investment.

Grab and go

The 360-degree hydraulic rotating four-tine grapple helps maximize machine versatility and productivity in material-handling applications. A $\frac{3}{8}$ -cubic-yard grapple is approved for use with the DX210WMH-5 and DX225MH-5, and features a semi-closed tine design for a firm grasp on most materials. A magnet is also approved for both models to pick up and place smaller scrap metal, which is powered by an optional generator, energizing the magnet when picking up metal.

Match power to the project

The DX225MH-5 and DX210WMH-5 allow you to manage the balance of fuel consumption and machine power to working conditions with four selectable power modes, including:

- **Power+ mode:** delivers the fastest workgroup speeds and greater power for demanding material-moving applications
- **Power mode:** provides exceptional power and superior performance for tough heavy-lifting, quick truck-loading and fast travel speed
- **Standard power mode:** enhances the machine's fuel consumption while delivering high performance in everyday lifting and moving of material
- **Economy mode:** helps reduce fuel consumption for low-demand applications and slows down machine movement for conditions that require more precise movements

Visit www.DoosanEquipment.com and click on the Material Handlers link on the Products tab to learn more about Doosan material handlers and attachments.

In addition, the new Doosan “dash-5” material handlers feature a Lifting work mode. The Lifting work mode provides increased pump torque, lower engine rpm and an automatic power boost to improve precision when lifting and placing materials.

POWER TILTING COUPLER

180 DEGREES OF MOVEMENT FROM NEW TILTING COUPLER

Increase your excavator's flexibility, versatility and precision when digging trenches, working in general excavation applications or completing final grading tasks with the new Doosan power tilting coupler.

With the new power tilting coupler, you can angle a trenching or ditching bucket 90 degrees left and right for up to 180 degrees of flexibility. The power tilting coupler provides precision while digging and can work under or around objects, such as an underground pipe, to complete excavating tasks.

If you are working in general excavation, underground utility, landscaping and grading, or erosion control applications, the coupler can help eliminate the need for multiple attachments on a jobsite. In demolition applications, you can tilt a hydraulic breaker to reach concrete without repositioning the excavator.



The coupler is approved for 10 Doosan excavators — DX63-3 compact model; DX140LC-5 through DX255LC-5 crawler models; and DX140W-5 through DX210W-5 wheel models — with two-way auxiliary hydraulics and pin-on attachments.

Visit www.DoosanEquipment.com and click on the Attachments link on the Products tab to learn more about the Doosan power tilting coupler and other excavator attachments.

SEVERE-DUTY BUCKETS

POWER THROUGH HEAVY DIGGING WITH NEW SEVERE-DUTY BUCKETS

New severe-duty buckets — available for Doosan DX140LC-5 through DX530LC-5 crawler excavators — handle abrasive materials in heavy-digging and loading applications, because of a variety of bucket enhancements.

Abrasive-resistant material

Side cutters, shell bottom and side plates, as well as a weld-on wear shroud, all consist of abrasive-resistant material.

Gussets

Reinforcing gussets strengthen the machine fitting joint on the bucket. The number of gussets depends on the excavator bucket size.

Wear pads

Front wear pads provide additional protection from rock and irregular materials.



Thicker cutting edge

A thicker and more robust, abrasive-resistant cutting edge helps chew through tough materials.

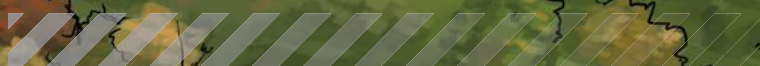
Rolled wear strap

An abrasive-resistant wear strap on the bottom improves wear resistance when working in harsh materials.

Visit www.DoosanEquipment.com and click on the Attachments link on the Products tab to learn more about new Doosan severe-duty buckets.

DOOSAN EQUIPMENT MAKES IMPOSSIBLE MISSION POSSIBLE

Mount Washington Cog Railway utilizes a Doosan excavator for challenging project at 6,200 feet



COMPANY INFO

Business: Mount Washington Cog Railway

In business since: 1869

Location: Marshfield Station, New Hampshire

Doosan machine: DX140LCR-3 excavator

Doosan dealer: Equipment East

What do you do when faced with an insurmountable challenge of completing a construction project on the highest peak in the Northeast? Some would shy away from such an endeavor, but not the team at the Mount Washington Cog Railway.

The tourist attraction in Marshfield Station, New Hampshire, is installing a fourth railway switch, located about 500 feet below the summit, with some help from a Doosan DX140LCR-3 crawler excavator and a pair of attachments. The additional railway switch is a three-phase project that will eventually help guide trains from one track to the other, increasing the frequency of passenger visits to the summit.

Facing unique, challenging conditions

Mount Washington (elevation 6,288 feet) is known for erratic weather and fluctuating temperatures that can vary throughout the year — from -49 to 74 degrees Fahrenheit. Snow is also common on the summit, with an annual snowfall amount of 177 inches (14.75 feet), and average wind speeds are 37 miles per hour. Because of the Arctic-like conditions at the summit, Gareth Slattery, general manager at the Cog Railway, knew it would be a challenge building a fourth railway switch, even during warm spring months.

After consulting with Jim Mullen, his Equipment East sales specialist, Slattery rented a DX140LCR-3 reduced-tail-swing excavator because of its reliability and operating weight — an ideal match to fit on the specially designed haul cart. “I can count on Jim to send me a

machine that is functional,” Slattery says. “I am all about service because when we get the machine on a mountain, you just don’t run your mechanic up there to fix it. I knew that I could count on Jim and his recommendation for this application.”

Overcoming obstacles

Slattery faced multiple challenges, including how to transport the DX140LCR-3 to the project site. He had mechanical engineer Al LaPrade design a cart to haul the excavator to the summit — a machine heavier than the DX140LCR-3 could not have been transported.

Workers dealt with unrelenting snow and ice, even in May. Before working on the fourth switch installation, they had to move two-foot-wide rocks using the DX140LCR-3 with a bucket and a hydraulic clamp. After the rocks were moved, more than eight feet of snow had to be cleared so workers could continue on the fourth switch. If that wasn’t challenging enough, two feet of ice had settled underneath the snow.

Slattery paired the DX140LCR-3 with a hydraulic breaker to help break up the frozen ground — known as permafrost — allowing for a more malleable surface to lay the support beams. “We flattened out spots for our pedestals for that switch to sit on,” he says. “We created some semi-flat spots for the ‘benches’ to go in. A lot of what the excavator did is act like a crane and lift beams into place.”

The DX140LCR-3 worked on the project until the end of June 2015. The excavator was brought down from the site and a second Doosan excavator will be used again in spring 2016 to continue the project. “We hope to have the project finished and the fourth switch operational by July 2016,” Slattery says.



“I am all about service because when we get the machine on a mountain, you just don’t run your mechanic up there to fix it. I knew that I could count on Jim and his recommendation for this application.”

— GARETH SLATTERY / Mount Washington Cog Railway

Adding a fourth switch will improve the Mount Washington Cog Railway’s operating efficiency to better manage passenger traffic up and down the mountain. “When we get the fourth switch installed, we will have an additional siding on the summit that will allow us to run 45-minute schedules,” he says. “The schedule is set up now so when the train arrives at the summit, it unloads passengers and the passengers from the previous hour get on the train and come down the

mountain. We will be adding at least one additional trip a day, if not two, and the passengers can go up and come down on the same train.” The uniqueness of the cog design is something employees at the Mount Washington Cog Railway take pride in. With the help of the Doosan DX140LCR-3 excavator, employees will continue to utilize steam and diesel locomotives on the cog railway and be able to accommodate visitors for years to come. **DM**



Since 1869, locomotives at Mount Washington Cog Railway have been built in-house using materials obtained locally. Each locomotive costs approximately \$700,000 to build and is made onsite to fit the intricate cog system. A pair of hydraulically driven cog gears, engaged in a stationary cog rack and installed between the rails, provides the tractive force to propel the train up the mountain at an average grade of 25 percent.

Today, the Mount Washington Cog Railway primarily uses five biodiesel locomotives, introduced in 2008, to help reduce emissions and conserve fossil fuels. It takes approximately 37 minutes and nine gallons of biodiesel fuel for each of these locomotives to reach the summit.

■ For more information on the Cog Railway, visit www.thecog.com

SERIOUS EQUIPMENT REQUIRED FOR SHORELINE PROTECTION PROJECT

Doosan ADTs haul 60,000 tons of stone and 160,000 cubic yards of sand in harsh environment

COMPANY INFO

Business: Precon Marine

In business since: 1993

Location: Chesapeake, Virginia

Doosan machines: Two DA30 ADTs and a DL420-5 wheel loader; rented DX350LC-3 and DX350LC-5 excavators

Doosan dealer: H&E Equipment



sand-fill placed landward of the breakwaters. For Precon Marine, the job required some serious equipment.

"My first impression of the job was dealing with the environment," says Gene Hand, Precon Marine's project manager for the \$11.6 million project. "The island is exposed to wind and

You cannot have a picnic on Craney Island, and working there is no picnic either. The weather can be dreadful, the bugs pose an annoying problem, and if you are doing a construction project you had better bring along some reliable, heavy-duty equipment.

The island, located off the shore of the Hampton Roads area of Virginia, was constructed in the 1950s as a low-cost alternative for the placement of dredged material to keep the 55-foot-deep channel open for vessels, container ships and barges. By having a nearby place to dispose of material, the channel allowed the Port of Virginia to grow into one of the nation's busiest.

Over time, erosion took its toll and recently the U.S. Army Corps of Engineers, which manages the island, decided to replace the existing, randomly placed concrete rubble along the northern shoreline.

The contract was awarded to Precon Marine, a diversified contractor specializing in heavy marine construction, waterfront construction and related services. The company has a successful track record in major bridge, pier and bulkhead rehabilitation work and underwater utility installation.

The revetment project on Craney Island called for the construction of 4,100 linear feet of shoreline protection, eight breakwaters and

storms on all sides. It is hot in summer, cold in winter. There is really no way to get out of the harsh weather. Along with abundant wildlife and birds, the place is overrun with bugs and insects. It is not the ideal location."

Nevertheless, Precon Marine has been working around weather-related obstacles to build the breakwater structures. They consist of large armour stones and plastic baskets — commonly known as "mattresses" — filled with medium-size core stones, along with sand hauled in to construct a peninsula out to each breakwater.

The armour stones, which are resistant to wear and erosion, are delivered by barge down the upper James River from a nearby quarry. They are off-loaded by an excavator, placed into two Doosan DA30 articulated dump trucks (ADTs) and delivered to the breakwater jobsite or stockpiled for later use.

"Each stone weighs about 500 pounds, so one of our requirements was to use top-of-the-line, heavy-duty trucks," Hand says.

Doosan ADTs were recognized in 2014 by *Better Roads* magazine as a Top Rollout. The Doosan DA30-5 and DA40-5 were among the top 25 products recognized by the editor of *Better Roads* magazine.





“I had no previous experience with Doosan trucks prior to this assignment, but what I have seen is impressive.”

— GENE HAND / Precon Marine

“The Doosan models turned out to be the perfect fit for this rough application. We put wear plates in the bed of the trucks to absorb most of the abuse. We have moved more than 60,000 tons of armour stone in the trucks. They have held up very well.”

The DA30, with a 23-cubic-yard body volume capacity, is capable of moving a significant amount of material every day, then dumping it from the truck box with a standard scissor-type tailgate. The high-production ADT is known for delivering superior performance in the toughest applications.

When not moving the armour stone, the trucks haul sand (reclaimed from dredging material) from the other side of the island to where the breakwaters are being built, a distance of about 1½ miles. The trucks can travel up to 34 miles per hour and transport material faster than other material-handling machines.

When the island roads are not shut down by heavy rain, the trucks make dozens of trips each day hauling sand. At the completion of the project, it is expected that they will have delivered more than 160,000 cubic yards of sand to the breakwaters.

“I had no previous experience with Doosan trucks prior to this assignment, but what I have seen is impressive,” says Hand, who has spent his entire career working in and around water. “This is 100 percent heavy-duty work. The trucks are durable, reliable and quiet. They are very strong workhorses. The operators really like them.”

Along with using the trucks 10 to 12 hours a day, the operators need the skill to negotiate the trucks on the breakwaters to dump the base material. “The trucks are very easy to operate and maneuver through some difficult situations,” Hand says.

A free-swinging rear tandem bogie helps to maintain ground contact for all six wheels for a smooth ride and good traction in soft and wet ground conditions.

The DA30 ADTs were purchased from the local Doosan heavy equipment dealership, H&E Equipment, in Chesapeake, Virginia. That is the same dealer who delivered another valuable machine — a Doosan DL420-5 wheel loader — that is used with the pallet fork attachment for moving equipment around the jobsite and off-loading trucks, and with a bucket for loading stone. Precon Marine also rented two Doosan crawler excavators, a DX350LC-3 and DX350LC-5, to assist on the project.

This was also Hand’s first experience with a Doosan wheel loader. He says the multi-task machine is very tough and responds well to continuous use. “It is very user-friendly,” Hand says.

Whether it is ADTs or wheel loaders, Doosan has demonstrated how durable equipment pays off in difficult working conditions. **DM**

Learn more about the benefits of Doosan ADTs by visiting www.DoosanEquipment.com, then click on the Articulated Dump Trucks link on the Products tab.





LIMESTONE EXTERIORS BRING OUT THE BEST IN NOTABLE BUILDINGS

It all begins when a wheel loader lifts stone out of Ontario quarries

COMPANY INFO

Business: Ledgerrock Natural Stone Products

In business since: 1991

Location: Owen Sound, Ontario

Doosan machine: DL250TC-3 wheel loader

Doosan dealer: CG Equipment

What do the Toronto Opera House, San Francisco's St. Regis Hotel, the Butterfly Conservatory at Niagara Falls and Tiffany's in New York City have in common? They are all showcase buildings in high-visibility locations. And they prominently feature limestone rock as a part of their exterior. More surprisingly, all the limestone came from the same place.

Those quarries, located on the Bruce Peninsula in southwestern Ontario, produce some of the world's most spectacular limestone.

"Since many architects like the unique look of limestone, it is a popular choice for building exteriors," says Tom Stobbe, owner (with his sister Linda) of Ledgerrock Ltd. "Limestone always has the look of a quality product. That is why we have quite an impressive list of customers throughout North America and even around the world."

What they don't have is the luxury of time. Speedy delivery of a quality product is now the industry standard. For Ledgerrock, the

process begins at one of its three quarries (Owen Sound, Wiarton and Hope Bay), proceeds to the firm's 100,000-square-foot fabrication shop and then onto building jobsites.

Mining the quarry takes strong, yet precise equipment

Ledgerrock is the leading producer of Eramosa marble/limestone, Algonquin limestone, Hope Bay limestone and Mara limestone. A quarry consists of multiple layers of stone; some are thin (4 to 6 inches thick), others much thicker (up to 3 feet). Each layer has a unique texture and color.

The process of removing the stone includes cutting it into cubes with diamond-belt saws. The product is removed from the wall of the quarry using a Doosan DL250TC-3 wheel loader with a pallet fork attachment, which then carries the cubes to the fabrication plant (located at the Owen Sound quarry) or loaded onto trucks at the other two quarries for delivery to fabrication.

Removing and carrying the cubes has become more efficient since Ledgerrock purchased the DL250TC-3, a tool carrier (TC), parallel-lift-arm machine designed for lift-and-carry applications. The wheel loader weighs 31,769 pounds and has a dump height of 9 feet.

The wheel loader, according to Stobbe, has several features that have improved the entire process.



“The parallel lift arms provide the operator with excellent visibility. You can actually see what the tips of the pallet forks are doing.”

— **TOM STOBBE** / Ledgerock Natural Stone Products

“The parallel lift arms provide the operator with excellent visibility,” he says. “You can actually see what the tips of the pallet forks are doing. Picture a wall 4 to 5 feet thick with multiple layers that might be a foot apart. To remove the cubes, you need to exert a little force to break them apart, so proper positioning of the forks is critical. If you cannot see the tips of the forks, it makes it very difficult.”

Stobbe points out that the machine keeps the pallet forks and the material level. “That means one less function the operator has to perform,” he notes. “It is very helpful.”

Another key feature: The wheel loader’s limited-slip differential helps ensure steady operation on uneven terrain. “The ground from the quarry to the fabrication building is rough, with a lot of sharp stones,” Stobbe says. “The DC250TC-3 does a nice job of keeping the load level.”

The hydraulic quick coupler, which allows the operator to change attachments quickly and easily, is also valuable.

“We change between pallet forks and buckets frequently,” Stobbe says. “After the blocks are removed with the forks, there is some cleanup required because they all do not come out as a solid piece. A cube that is cut to size may fall apart if it is fractured. So, being able to efficiently switch to the bucket for picking up the broken pieces is important.”

The wheel loader’s impressive performance in what Stobbe calls a demanding application is increasing its popularity around the facility.

“We are running 30 pieces of heavy equipment,” he says. “Some employees like one brand, some like another brand. And now we have a growing number of operators who prefer Doosan.”

Fabricating the stone

After the limestone cubes are delivered to the Ledgerock fabrication shop, the company’s high-tech equipment takes over, turning out a large variety of stone shapes and sizes.

For some orders the company supplies shop drawings (layouts of the stone) and shop tickets (used for cutting the stone). “For example,” says Stobbe, “if a customer wanted all flat panels on the outside of a building, we would provide drawings on how big the stones would have to be, what sides get polished and where the anchors would be drilled to hold the stone.”

For this premier supplier of limestone products, having a group of 150 talented employees, an almost unlimited supply of stone in the ground and some durable heavy equipment has enabled the company to keep up with the time-sensitive dealer and custom orders. Not to mention, leave their mark on buildings around the world.

“Long lead times are a thing of the past,” Stobbe says. “We are doing our best to keep up with the demand.” **DM**

Learn more about Doosan wheel loaders and tool carriers by visiting www.DoosanEquipment.com and clicking on the Wheel Loader link on the Products tab.



Tom Stobbe,
Ledgerock
Natural Stone
Products, and his
DL250TC-3 wheel
loader



EARLY ADOPTER OF MECHANIZATION — AND DOOSAN LOG LOADERS

Pacific Northwest logging company is always ready to try something new



COMPANY INFO

Business: C & C Logging

In business since: 1967

Location: Kelso, Washington

Doosan machines: Three DX225LL log loaders and one DX300LL-5 log loader

Doosan dealer: Feenaughty Machinery Company

Almost five decades ago, in 1967, Frank Chandler Sr. began his logging career and started a new business in the logging industry. With no funding available, plenty of bills to pay and understanding it was a huge risk, he thought he could make it work if he just worked hard. So, he began working from sunrise to sunset, his motto becoming, “if I can get just one more log, it will be okay.”

Once the business — C & C Logging — got established, the company became a pioneer in the use of mechanization in Washington and Oregon.



Frank Chandler Sr., owner of C & C Logging

“That is a big factor in our success,” says Chandler Sr. “As soon as we saw something that might work for us, we wanted to try it. When it comes to equipment, I think you have to be on the leading edge. If there is a product that is going to be good for your industry, you don’t want to be the last one to get it.”

That philosophy recently led to the purchase of three Doosan DX225LL log loaders and a DX300LL-5 log loader. “One of the ways I evaluate equipment is really simple: I ask ‘Does it run every day?’ says Chandler Sr. “These three machines are very dependable and durable. They more than passed the test.”



“We have had very good luck with our three Doosan machines. Very little downtime, no service calls, superior fuel efficiency. They have turned into real good tools for us.”

— FRANK CHANDLER JR. / C & C Logging



To view the full interview with C & C Logging, visit www.DoosanEquipment.com/RealWork

Family tradition of embracing technology

C & C Logging, headquartered in Kelso, Washington, is one of the most prominent contract logging firms in the Pacific Northwest. Frank Chandler Jr. runs the operations side of the 100-employee company with his father. The elder Chandler's wife, Lee, has managed the office since 1967, and their daughter, Leann Beech, shares the office workload. All four family members have been partners in the business since 2004.

“Twenty years ago, a lot of people were not looking at new technology,” says Chandler Jr. “My dad, however, embraced mechanization early on and it really has been good for us. By getting as many guys off the ground as possible, we have been able to achieve a very high safety rating and improve our efforts to reduce insurance costs. We currently have the highest safety rating among loggers in the state of Washington.”

Working for large landowners, both private and industrial, the company business model is what Chandler Jr. calls “stump-to-

dump: We cut the timber, yard it, manufacture it and deliver. Our specialty is handling the entire process.” With a good volume of regular business, the firm usually has 12 to 14 sides working each day, delivering a total of 160 to 180 loads of logs.

Early adopters choose Doosan equipment

Chandler Sr. says that C & C Logging was among the first companies in the Northwest to use Doosan log loaders. “I was a little concerned at first because we had no experience with the brand,” he says. “We have a very good dealer — Feenaughty Machinery Company in Portland — and we trust their judgment. Not only have the log loaders been a valuable addition to our equipment fleet, but I like the fact that Doosan is paying attention to the needs of our industry even though as a whole we are a fairly small group.”

Chandler Jr. adds: “It’s kind of exciting that Doosan is taking such an active interest in what we are doing. Not all manufacturers have the same approach.”

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Doosan DX225LL and DX300LL-5 log loaders are more than ready to take on the challenging jobs in the timber industry. They have features designed specifically for forestry applications, including a high-walker undercarriage design, tracks that feature heavy-duty links with double grouser shoes, full-length track guiding guards and heavy-duty top rollers with special cleanout brackets.



Standard features include mainframe reinforcement, full under-house plate guarding, integral catwalks, heavy-duty side doors with guarding over the hydraulic pump and cooling system doors, and undercarriage guarding.

“We have had very good luck with our three Doosan machines,” says Chandler Jr. “Very little downtime, no service calls, superior fuel efficiency. They have turned into real good tools for us.”

As Chandler Jr. looks to the future and continuing his family’s legacy in the logging industry, he has much appreciation for the early struggles his parents endured to start the business.

“I don’t think my dad ever had a vision that the company would do so well and grow so big,” he says. “He didn’t think that far out. It was just ‘how am I going to make a buck today? How am I going to pay the bills?’ He was always looking to identify an opportunity and see where that would take us.

“My dad taught me everything I know,” continues Chandler Jr. “He is 74 years old and still out here regularly, checking on how we are doing. He likes nothing better than being out in the woods. And trying something new that will make our company better.” **DM**

Visit www.DoosanEquipment.com and click on the Log Loaders link on the Products tab to learn more about Doosan log loaders for tough forestry applications.

9 WAYS TO MAKE SAFETY NO. 1



WHEEL LOADER ECONOMICS

Texas firm does the math and decides leasing is the best option

COMPANY INFO

Business: Ygriega Field Services
In business since: 2008
Location: Edinburg, Texas
Doosan machine: DL250-3 wheel loader
Doosan dealer: H&V Equipment

Faced with the many unknowns in the oil business, Ygriega Field Services, a Texas company specializing in on-site services for the drilling industry, developed a strategy for the future.

After taking a hard look at the economics of heavy equipment, the company turned its attention to a Doosan DL250-3 wheel loader. The decision to purchase the machine has already made a significant impact on both the current financial situation of the firm and the plan to expand its workload.

“We previously rented wheel loaders from local rental centers, primarily to handle pipe and crushed rock at drilling sites,” says purchasing manager Pablo Almaguer. “A six-hour rental could cost us as much as \$1,200. We would usually do that twice a month. So, our total cost of having limited access to a wheel loader would be around \$2,400 a month. That seemed high in today’s economic environment. Plus, we had no motivation to look for other work that would require a wheel loader because most of the additional income would go to the rental company. That’s why we began to consider alternatives.”



Group (left to right): Arnold Maldonado Jr., president of Ygriega Field Services, LLC; Arnold Maldonado Sr., CEO Ygriega Energy Company, Inc.; Pablo Almaguer, general manager Ygriega Energy Company, Inc.

Choosing the right wheel loader, based on what it could do and what it would cost, became the focus of Ygriega Field Services, which is part of Ygriega Energy Company.

They looked at several brands, and Doosan stood out as the clear choice.

“For about the same money as we were paying for a pair of six-hour rentals each month, we now are leasing — with an option to buy — a very productive Doosan wheel loader. The three-year arrangement allows us to use our monthly payments as a down payment if we want to purchase the loader. Or we can continue the leasing program with a new model after the current lease expires.”

The financing arrangement is not the only benefit of having a top-of-the-line wheel loader available every day.

“Once we got the DL250-3 wheel loader, we informed the well-drilling community that we were capable of taking on a variety of additional assignments,” Almaguer says. “There are many projects connected to well drilling that we can do much easier with our wheel loader. Our customers like dealing with fewer vendors, so the more services we can provide the better.”

He points out that if the company can keep the wheel loader busy with one job a week, it can make the payment and keep employees busy. “Instead of the dollars going to a rental firm, more of the income is staying in our own pocket,” he concludes. **DM**

Visit www.DoosanEquipment.com and click on the Wheel Loaders link on the Products tab to learn more about Doosan wheel loaders and approved attachments.

SURVIVING BOSTON'S WORST WINTER

'Crazy' winter tests snow removal specialist and his Doosan equipment



COMPANY INFO

Business: Sarris Auto and Truck Equipment

In business since: 1998
(snow removal in 2001)

Location: Waltham, Massachusetts

Doosan machines: Five DL200-3 and DL200TC-3 wheel loaders

Doosan dealer: Equipment East

Stocking the right equipment, preparing it at various locations and having dependable employees on standby are three reasons George Sarris survived the worst winter in Boston's history. During winter of 2014 – 2015, Boston, Massachusetts, broke an all-time season snow record — which meant lots of work for snow removal specialists.

Sarris and his family own and operate Sarris Auto and Truck Equipment, Inc. Sarris Snow Removal is a division of Sarris Auto and Truck Equipment, and specializes in snow and ice removal. When Boston was smacked in January and February 2015 with back-to-back mega snowstorms, Sarris fought back with snow and ice removal equipment to help his customers maintain their daily schedules.

Sarris was introduced to Doosan wheel loaders more than three years ago when he began renting them to handle large snow removal tasks. It turned out so well that he purchased his first Doosan wheel loaders for the following winter. "I bought two Doosan wheel loaders after I had a successful winter because they are productive machines," Sarris says. "The quality of the machines is what impressed me. They do an excellent job of removing snow, and the cab is roomy and comfortable for the operators."

"In the snow removal industry, you have to have good equipment to be able to do the work," he says. "You have to have dependable machines and you have to do a good job. Any kind of edge you can get is a good thing."

Sarris and his equipment operators clear snow from large municipal parking lots, big-box home improvement stores, area shopping malls and even a few residential neighborhoods. To handle bulk snow removal, Sarris has purchased five Doosan wheel loaders. "The Doosan DL200-3 and DL200TC-3 are the perfect size for me," he says. "The DL200-3 wheel loader with a bucket can easily handle the snow."

Altogether, Sarris has 40 pieces of equipment, including trucks, some with salt and sand spreaders in the cargo box and plows on the front. He owns four Bobcat® skid-steer loaders and snow-removal attachments to clear snow from areas where his larger machines and trucks can't fit.

Strategic planning

Sarris believes in planning for snow storms, having his equipment ready and employees on call, available to respond quickly after a storm. "I have my equipment onsite, and it is serviced and fueled," he says. "I call my operators and put them on standby when a storm is approaching. I have dedicated employees at certain locations and they go to work as soon as they can." Many of his employees are laid off from other jobs in winter months due to seasonal employment. "I have a lot of work in winter, so I keep them busy."

Commercial centers want their parking lots free of snow before they open each morning. That can present a challenge for Sarris, depending on the timing of the snow storm, but his crews do their best to have the lot as clear as possible before employees and customers start arriving. "We try to clear as



“The Doosan DL200-3 and DL200TC-3 are the perfect size for me. The DL200-3 wheel loader with a bucket can easily handle the snow.”

— **GEORGE SARRIS** / Sarris Snow Removal



much as we can before the stores open, depending on the timing of the snow event,” he explains. “We do a lot of our work after hours and in the early morning. When you get snow early in the morning and the store has to open at 7 a.m., you need to move quickly.

“We had a crazy winter this past year. There were several big snowstorms. It was a test on a lot of our equipment and our mental abilities; it was very challenging.”

Where to put all the snow?

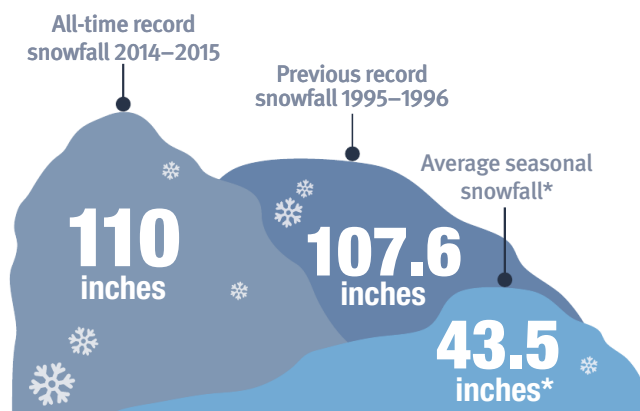
Winter storms Juno and Marcus ranked sixth and seventh for Boston snowstorms, based on snowfall, respectively. With all of that snow and little room to put it, Sarris had to think outside of the box. “We hauled some of it onsite and stockpiled it,” he says. “In Watertown, we joined forces with another company that has a snow melter and we melted the snow from an entire parking lot.”

Snow removal can be a challenging business because of the unpredictability of the work. Unlike planned construction jobsites, Sarris has to be prepared 24/7 in winter to respond to a storm. “When the big snowstorms strike, you need to get things done quickly. If you don’t have the right equipment, you are not going to keep up.” **DM**

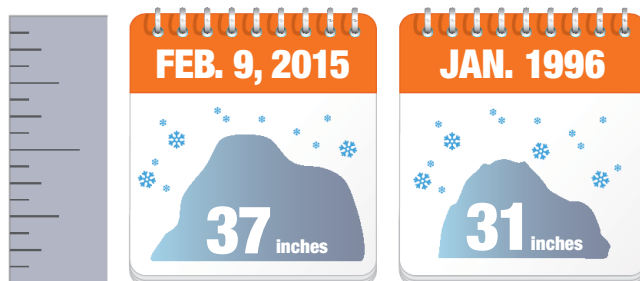
Visit www.DoosanEquipment.com and click on the Wheel Loaders link on the Products tab to learn more about Doosan DL200-3 and DL200TC-3 wheel loaders.

2014 – 2015 BOSTON SNOW SEASON

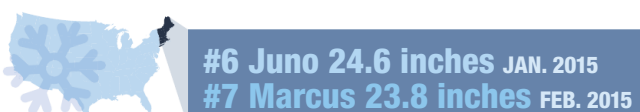
One for the record books



Record snow depth



Two ranked winter storms in one season



Source: weather.com

Snowiest month on record.



64.8 inches
FEB. 2015

Previous record



43.3 inches
JAN. 2005



*At Logan Airport

THREE EXCAVATORS TAKE THE LEAD IN DEVELOPING ATLANTIC CANADA

Entrepreneur counts on Doosan equipment to create communities and new energy sources

COMPANY INFO

Business: Brison Developments Ltd.

In business since: 1990

Location: Windsor, Nova Scotia

Doosan machines: DX225LC-3 and two DX300LC-3 crawler excavators

Doosan dealer: Nova International



“My veteran operators especially like the comfortable cab, the smooth controls, the well-balanced structure and industry-leading technology.”

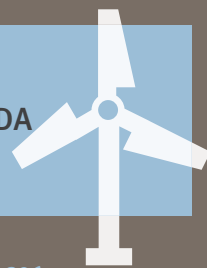
— MITCHELL BRISON / Brison Developments



Group (left to right): Seth Brison (son), Mitchell Brison (owner) and Gerry Brown (foreman).



WIND ENERGY IN CANADA AT A GLANCE:



WIND FARMS: 206

WIND TURBINES: 5,114

EQUIVALENT NUMBER OF CANADIAN HOMES POWERED BY WIND: more than 2 million

Source: Canadian Wind Energy Association

Mitchell Brison is a big believer in Atlantic Canada, a small group of islands and peninsulas located between Quebec and the Atlantic Ocean. That is why this Nova Scotia-based entrepreneur has played a significant role in developing residential housing for 25 years, and more recently, in helping to create local sources of energy.

His goal has always been to grow the area, bring in people and create jobs. One of his companies — New Valley Homes, Inc. — has built several communities from start to finish. Brison Developments, Ltd., another of his enterprises, has played a significant role in helping develop the renewable energy industry. “It shows that we are keeping up with the times in creating local sources of energy,” he says.

Brison’s large inventory of construction equipment enables him to do much of the work on all of his projects with his own machines. That’s a huge benefit for maintaining tight schedules and increasing his company’s profitability.

“I want my crews to have the best equipment available so they can work productively, efficiently and in comfort,” he says.

That equipment includes three Doosan crawler excavators, a versatile trio that delivers excellent results in several applications.

Two DX300LC-3 excavators bring plenty of horsepower to handle larger earthmoving jobs. The digging reach of 34 feet 6 inches, combined with the digging depth of 23 feet 11 inches, is perfect for high-production applications. Brison’s other crawler excavator is a slightly smaller DX225LC-3. The excavator stands out in the 21- to 24-metric-ton size class. With a digging depth of 21 feet 7 inches, and a digging reach of 31 feet 10 inches, the performance-driven DX225LC-3 produces best-in-class results and does it very efficiently.

“My veteran operators really like our Doosan machines,” says Brison, who has had a great deal of experience with other brands of equipment over the years. “They especially like the comfortable cab, the smooth controls, the well-balanced structure and industry-leading technology. I like the pricing, financing, warranty and superior fuel efficiency.”

Heavy equipment plays multiple roles in preparing home sites

For more than 25 years, Brison has been developing land for residential communities throughout the Annapolis Valley and the Halifax Regional Municipality. His communities have proven attractive to both retirees and people who commute to Halifax, the provincial capital about 30 minutes away.

As he continues to develop these affordable housing communities, he relies on his Doosan crawler excavators to help prepare the sites. The machines are used for excavating, land clearing, building infrastructure and installing sewer and water utilities.

“Having this type of heavy equipment available every day is a real bonus,” he says. “Because they are so productive and reliable, everything just keeps moving forward.”

Clearing the way for renewable energy sources

Three new wind turbines near Brison’s office in Falmouth, Nova Scotia, are generating electricity for about 1,700 to 1,800 homes in the area. Not only was he an investor in the Martock Ridge Community Wind Project, his company was awarded the contract for all of the civil work on the job. He had 15 employees and his three Doosan crawler excavators working at the site excavating, building roads and constructing foundations for the cranes that placed the turbines, as well as the base for the turbines.

“It was a very difficult job,” Brison says. “The 3-kilometer-long road had to be built through an old pasture and wooded area, hilly and with plenty of granite rock. We used a lot of dynamite to remove the very tough rock.”

The three excavators loaded pieces of the blasted rock into trucks. One of the machines was equipped with a hydraulic breaker attachment to break up the bigger boulders.

The company’s involvement in this job was well received.

“Brison Developments certainly took on a large chunk of challenging work,” Dan Roscoe, chief operating officer for Scotian WindFields, the private company that built the project, told a local newspaper. “It is in a watershed, so there is a high quality that needs to be adhered to, and they accomplished that with flying colors.”

Brison expects to do more wind turbine projects in the future, along with continuing to develop additional residential communities. His extensive lineup of equipment, including the three Doosan crawler excavators, will help him reach his goal to grow his community. **DM**

Visit www.DoosanEquipment.com and click on the Crawler Excavator link on the Products tab to learn more about Doosan crawler excavators and approved attachments.

TWO CONTRACTORS USE THREE CRITERIA TO SELECT ONE ATTACHMENT BRAND

Choosing versatile Doosan attachments improves productivity and reduces downtime



COMPANY INFO

Business: Fred E. Prior and Sons, Ltd.
In business since: 1914
Location: Guelph, Ontario
Doosan machine: DL250-3 wheel loader
Doosan dealer: CG Equipment

Business: Lloyd Collins Construction
In business since: 1968
Location: Teeswater, Ontario
Doosan machine: DX235LCR excavator
Doosan dealer: CG Equipment

Choosing the right type of attachment can be a difficult decision for some businesses. However, for two Ontario, Canada, businesses — Fred E. Prior and Sons, Ltd. and Lloyd Collins Construction — the decision to purchase genuine Doosan attachments was made after weighing specific criteria, including whether the attachment would:

1. Boost productivity
2. Withstand tough jobsites
3. Adapt to multiple machines



Rick Tufford (left) and John Atkinson Jr. of Fred E. Prior and Sons, Ltd.

Attachment productivity

Both businesses needed attachments that would help them efficiently complete construction and demolition projects. John Atkinson Jr., general manager at Fred E. Prior and Sons, Ltd. in Guelph, Ontario, chose a general purpose bucket that could be used on his Doosan DL250-3 wheel loader — to easily load snow in winter and topsoil during spring.

“Last year we had a harsh winter and needed to keep up with the demand,” he says. “We were using our general purpose bucket at least once a week to load snow. We will be ramping up for spring and will need the bucket to continually load topsoil into truck beds.”

Chad Mann, owner of Lloyd Collins Construction in Teeswater, Ontario, needed an angle tilt bucket for his Doosan DX235LCR crawler excavator — for daily trenching, cleanup and to dig basements. With a 45-degree angle, Mann says the bucket allows his operators to dig in tight areas, increasing his overall productivity.



Doosan wheel loader operators can easily change from a pallet fork to a bucket with the quick coupler feature.



"We depend on this bucket to perform well," Mann says. "When using this attachment, we don't have to worry that material will constantly be spilling out of the bucket."

Withstand the toughest jobs

Doosan attachments have proven to be reliable and tough when working in difficult applications.

"I wanted a bucket that could go to a jobsite and not damage the pavement," Atkinson says. "We do a lot of clearing and pushing snow, so if we damage the asphalt or the attachment, we pay the price."

Atkinson also says loading snow with a bucket that has a cutting edge makes it so much easier. And the sloped-bottom design allows for maximum fill capabilities and material retention, as well as gives Atkinson's operators a more efficient dumping angle by 5 degrees.

Machine versatility

An attachment that can work with multiple machines can be very beneficial to business owners and operators because of reduced downtime and costs. For even more efficiency, Doosan offers an optional hydraulic quick coupler for easy attachment changes on its excavators and wheel loaders.

By using the quick coupler, operators don't have to leave the cab — for a quicker, cleaner and safer attachment change than with a traditional pin-on system. A two-stage electrical design and a pressure signal increases safety when using the attachment.

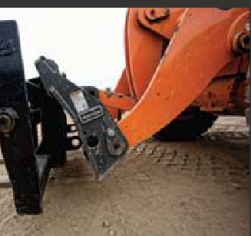
"Our operators change buckets often, so by having the quick coupler they are able to change an attachment in 30 seconds or less," Mann says. "It really allows us to be more productive and increase our jobsite versatility."

By choosing the right attachments, these two Ontario companies have increased their productivity, reduced downtime and improved jobsite versatility when operating their Doosan excavators or wheel loaders. **DM**

Visit www.DoosanEquipment.com to learn more about Doosan excavator and wheel loader attachments.

AVOIDING BREAKER BREAKDOWN

5 things you can do to keep your hydraulic breaker in good working condition



LOADING SCRAP METAL EFFICIENTLY TAKES VISION

Two recyclers find a better fit with Doosan material handlers

Scrap metal recycling is big business — 56 million tons of scrap iron and steel are processed annually in the United States, according to the Department of the Interior. The material comes to the recycler in all shapes and sizes, making it, at times, very difficult to handle.

Two firms count on Doosan material handlers to make that process more efficient — Jack's Recycling of Mount Morris, Pennsylvania, and Chamley Pipe and Salvage of Williston, North Dakota. Both companies would not want to be without their productive material-handling machines.



COMPANY INFO

Business: Jack's Recycling

In business since: 1962

Location: Mount Morris, Pennsylvania

Doosan machine: DX210WMH material handler with magnet

Doosan dealer: Best Line Equipment

Jack's Recycling:

Here today, gone tomorrow

Rick Smith, owner of Jack's Recycling, considers himself "one of the new kids on the block" because of his business philosophy: Whatever is purchased today is sold today or tomorrow. He does not keep any scrap metal on the ground.

"When I got into the business, I wondered why keeping piles and piles of scrap metal laying around was so common," he says. "It seemed to me that the faster you could sell the stuff, the faster you could get your money back. Right now we are spending \$40,000 to \$50,000 a day buying scrap."

And he's sending it out as fast as possible on one of his two 18-wheel tractor-trailers. Most often the destination is Pittsburgh. Last year Smith sent 972 loads in 250 working days to one of his vendors in the Steel City.



Rick Smith, owner, Jack's Recycling

One new machine that fits perfectly with Smith's philosophy of handling scrap metal quickly and efficiently is a Doosan DX210WMH wheel material handler. Specifically designed for the recycling and solid waste industries, it has rubber tires instead of steel tracks and is loaded with top-of-the-line features, including a standard 7-foot hydraulic elevating cab, front and rear stabilizers, straight boom and drop-nose stick, rotate-ready hydraulics and a maximum reach of nearly 36 feet.

Smith points out that the material handler is equipped with a magnet, making it "great for unloading trucks full of smaller items such as car rotors. The material handler and the magnet can clear out a truck in a couple of minutes."

The elevated operating position is the key to the machine's efficiency. The operator can see inside the truck bed and know exactly where to pick out metal objects that might be stuck together or in a corner. "No more guesswork or wasted time," Smith says.

When building an outgoing load, the material handler allows the operator to spread out the material evenly.

"Not only can you get more into the truck, but you can position things better," Smith says. "For example, if you have an empty spot that is two feet wide, you look for something that will fit instead of dropping in a larger item that won't go in the space. The DX210WMH material handler makes loading a truck much more efficient."

And that fits perfectly with what Smith wants to do: keep the material moving.



The elevated position is the key to the machine's efficiency. The operator can see inside the truck bed and know exactly where to pick out metal objects that might be stuck together or in a corner.

COMPANY INFO

Business: Chamley Pipe and Salvage

In business since: 2005

Location: Williston, North Dakota

Doosan machine: DX225MH-3 material handler with grapple and magnet

Doosan dealer: Ironhide Equipment

Chamley Pipe and Salvage: Loading railcars quickly

For Chamley Pipe and Salvage, outgoing material has to be trucked 30 miles in 15-ton-capacity roll-off containers from the company's processing lot to the railroad loading site. So, waiting to load the railcars is a Doosan DX225MH-3 material handler.

"That machine has made this job much more efficient," says Mitchell Phillips, yard foreman. "Compared to the excavator with bucket and clamp I previously used, the DX225MH-3 grabs more material and holds it better. Because I can see into the railcar, I can do a better job of placement. I can identify gaps in the load and fill in material where needed. With the excavator, I relied on someone to guide me in positioning the scrap metal. Sometimes the lack of clear vision would cause me to stack the material above the side of the car."

continued on page 24



From the raised cab of the DX225MH-3, Chamley Pipe and Salvage operators can quickly and efficiently load railcars with tons of scrap metal gathered from the region's oil fields.

That is not permitted, so I would have to spend time using the bucket on the excavator to pack it down.”

The material handler has eliminated all of the time-wasting practices.

“Everything is so simple,” Phillips says. “All I have to do is flip a switch to raise the cab to see right where I am placing material. It only takes a couple of hours to load a railcar.”

Company owner Will Chamley adds: “When Mitchell was loading the railcars with the excavator, he was sort of operating blind. The Doosan material handler makes his job 100 percent easier and safer.”

The DX225MH-3, which is also used to load the company's 700-horsepower wood chipper, rates high in operator comfort, easy-to-operate controls, cab design and fuel efficiency, according to Phillips and Chamley. “I can run it for 10 hours a day and barely use a quarter-tank of diesel fuel,” Phillips says.

From Pennsylvania to North Dakota, the consensus of these two firms is that a Doosan material handler is perfect for increasing efficiency when handling scrap metal. **DM**

Visit www.DoosanEquipment.com and click on the Material Handlers link on the Products tab to learn more about Doosan material handlers and approved attachments.



“Everything is so simple. All I have to do is flip a switch to raise the (material handler) cab to see right where I am placing material. It only takes a couple of hours to load a railcar.”

— MITCHELL PHILLIPS / Chamley Pipe and Salvage

PROJECTS IN PROGRESS



Photo by Steve Sisney, The Oklahoman

Does the heavy lifting

A Doosan DL200 wheel loader, operated by the Oklahoma Department of Transportation, and sold by H&E Equipment, helped clear debris left from a rock slide on a section of Interstate 35 at the 50 mile marker on Thursday, June 18, 2015, in Davis, Oklahoma.



Contest winner expects to grow business

Richard Johnston, owner of Johnston Landscaping Maintenance, Inc., of Westville, Indiana, was named the 2015 Doosan "Win a One-Year Lease" contest winner. Johnston applied his winnings to purchase a new DX140LCR-5 reduced-tail-swing crawler excavator. The machine will help him expand his landscape services such as digging trenches, moving rocks and clearing trees.

Conservation at work

Contractors across Iowa learned new soil and water conservation techniques and helped operate a DX225LC-3 crawler excavator at the 2015 Iowa Land Improvement Contractors Association Field Day. RTL Equipment in Grimes, Iowa, provided the DX225LC-3, which was used to create a third wetland pond on the 80-acre demonstration farm in Melbourne, Iowa.





MATERIAL HANDLERS

Model	Engine hp (kW) NET	Operating Weight lb. (kg)	Swing Torque lb.-ft. (kgf-m)	Drawbar Pull lb. (kgf)	Max. Loading Reach ft./in. (mm)	Max. Loading Height ft./in. (mm)
DX210WMH	161 (120)	58202 (26400)	60786 (8404)	26742 (12130)	35' 9" (10900)	39' 8" (12100)
DX225MH-3	162 (121)	60848 (27600)	60757 (8400)	60715 (27540)	35' 5" (10800)	40' (12200)
DX300MH-5	358 (267)	79366 (36000)	87787 (12137)	83258 (37765)	42' 7" (13000)	46' 3" (14100)



WHEEL LOADERS

	Model	Engine hp (kW) NET	Operating Weight lb. (kg)	Bucket Capacity cu. yd. (m³)	Max. Dump Height ft./in. (mm)	Breakout Force lb. (kg)
NEW	DL200-5	142 (106)	25794 (11700)	2.6 (2)	9' (2743)	22481 (10197)
NEW	DL200HL-5	142 (106)	26566 (12050)	2.6 (2)	10' 6" (3200)	22931 (10401)
NEW	DL200TC-5	142 (106)	26224 (11895)	2.6 (2)	8' 9" (2667)	21357 (9687)
	DL250-5	172 (128)	30115 (13660)	3.3 (2,5)	9' 2" (2802)	27120 (12301)
	DL250HL-5	172 (128)	31129 (14120)	3.3 (2,5)	10' 7" (3226)	25680 (11648)
	DL250TC-5	172 (128)	31592 (14330)	3.3 (2,5)	9' (2749)	25980 (11784)
	DL300-5	271 (202)	41645 (18890)	4.2 (3,2)	9' 4" (2845)	37768 (17131)
	DL300HL-5	271 (202)	42869 (19445)	4.2 (3,2)	11' 1" (3378)	37768 (17131)
	DL350-5	271 (202)	43541 (19750)	4.8 (3,7)	9' 11" (3040)	36869 (16723)
	DL350HL-5	271 (202)	44743 (20295)	4.8 (3,7)	11' 8" (3556)	35969 (16315)
	DL420-5	345 (257)	50783 (23035)	5.5 (4,2)	10' 1" (3075)	47210 (21414)
	DL420HL-5	345 (257)	50486 (22900)	5.5 (4,2)	11' 9" (3581)	49458 (22434)
	DL450-5	345 (257)	56868 (25795)	6.3 (4,8)	10' 7" (3226)	51930 (23555)
	DL450HL-5	345 (257)	57618 (26135)	6.3 (4,8)	12' 2" (3708)	51256 (23250)
	DL550-5	380 (283)	69887 (31700)	7.5 (5,7)	11' 2" (3405)	55528 (25187)
	DL550HL-5	380 (283)	70658 (32050)	7.5 (5,7)	12' 6" (3830)	55528 (25187)

HL = high lift / TC = tool carrier



ARTICULATED DUMP TRUCKS

Model	Engine hp (kW) NET	Operating Weight (empty with tailgate) lb. (kg)	Max. Loaded Weight lb. (kg)	Heaped Capacity (with tailgate) cu. yd. (m³)	Payload lb. (kg)
DA30-5	362 (270)	51588 (23400)	113318 (51400)	23.3 (17,8)	61729 (28000)
DA40-5	483 (360)	70107 (31800)	158292 (71800)	34 (26)	88185 (40000)

Specifications and design are subject to change without notice



EXCAVATORS

CRAWLER / WHEEL

Model CRAWLER	Engine hp (kW) NET	Operating Weight lb. (kg)	Arm Breakout Force lbf. (kg)	Max. Digging Depth ft./in. (mm)	Max. Reach at Grade ft./in. (mm)	Max. Dump Height ft./in. (mm)
DX63-3	59 (44)	13779 (6250)	5765 (2615)	13' 6" (4115)	20' 5" (6230)	13' 11" (4267)
DX85R-3	59 (44)	18960 (8600)	8069 (3660)	15' 6" (4725)	23' 11" (7295)	16' 4" (4995)
DX140LC-5	113 (85)	32783 (14870)	13228 (6000)	20' 1" (6135)	27' 11" (8530)	21' 1" (6440)
DX140LCR-5	113 (85)	34987 (15870)	13228 (6000)	19' 7" (5985)	27' 11" (8530)	23' 2" (7080)
DX180LC-5	129 (96)	43224 (19606)	20503 (9300)	20' (6110)	29' 7" (9020)	21' 3" (6500)
DX225LC-5	162 (121)	52086 (23626)	23810 (10800)	21' 7" (6580)	31' 10" (9710)	22' 5" (6840)
DX225LC-5 SLR	162 (121)	55731 (25279)	13288 (6027)	38' 2" (11650)	50' (15265)	35' 6" (10845)
DX235LCR-5	181 (135)	56019 (25410)	24471 (11100)	21' 10" (6670)	31' 7" (9630)	26' (7950)
DX255LC-5	184 (137)	57752 (26196)	28219 (12800)	22' 4" (6810)	32' 9" (9995)	23' (7025)
DX300LC-5	267 (199)	68764 (31191)	30644 (13900)	23' 11" (7305)	34' 6" (10530)	23' 10" (7280)
DX300LC-5 SLR	267 (199)	72462 (32868)	16535 (7500)	45' 2" (13780)	57' (17390)	39' 3" (11975)
DX350LC-5	313 (233)	80654 (36580)	41667 (18900)	24' 8" (7535)	35' 11" (10970)	23' 6" (7175)
DX420LC-5	338 (252)	94799 (43000)	43431 (19700)	25' 4" (7740)	37' (11290)	25' 3" (7710)
DX490LC-5	373 (278)	112206 (50896)	50045 (22700)	25' 6" (7790)	38' 11" (11865)	25' 9" (7865)
DX530LC-5	373 (278)	116576 (52878)	56879 (25800)	24' (7340)	37' 6" (11455)	25' 4" (7725)
DX530LC-5 SLR	373 (278)	117112 (53121)	26235 (11900)	49' 7" (15125)	63' 9" (19455)	39' (11890)

Model WHEEL	Engine hp (kW) NET	Operating Weight lb. (kg)	Arm Breakout Force lbf. (kg)	Max. Digging Depth ft./in. (mm)	Max. Reach at Grade ft./in. (mm)	Max. Dump Height ft./in. (mm)
DX140W-5	124 (93)	31526 (14300)	17064 (7740)	14' 8" (4490)	24' 2" (7375)	19' 4" (5905)
DX190W-5	168 (125)	43431 (19700)	20944 (9500)	18' 9" (5725)	29' 8" (9050)	22' 2" (6765)
DX210W-5	174 (129)	46077 (20900)	24030 (10900)	19' 4" (5905)	31' 10" (9705)	23' 4" (7115)



LOG LOADERS

Model LOG LOADER	Engine hp (kW) NET	Operating Weight lb. (kg)	Max. Loading Reach ft./in. (mm)	Max. Loading Height ft./in. (mm)	Swing Speed rpm	Draw Bar Pull lbf. (kgf)
DX225LL	146 (109)	65036 (29500)	36' 3" (11049)	42' 5" (12929)	11.7	71070 (32237)
DX300LL-5	267 (199)	81703 (37060)	38' (11582)	43' 1" (13132)	9.9	66138 (30000)

LC = long carriage / LCR = long carriage, reduced tail swing / W = wheel / SLR = super-long reach / LL = log loader

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